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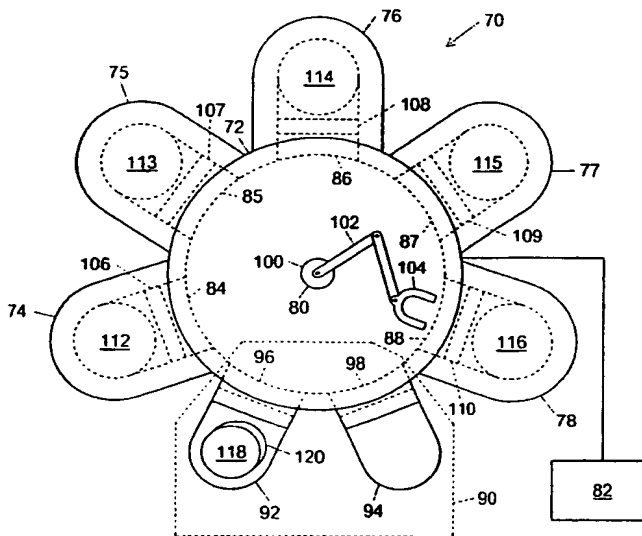
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(54) Title: **METHOD AND APPARATUS FOR SUPERCRITICAL PROCESSING OF MULTIPLE WORKPIECES**



(57) Abstract: An apparatus for supercritical processing of multiple workpieces comprises a transfer module, first and second supercritical processing modules, and a robot. The transfer module includes an entrance. The first and second supercritical processing modules are coupled to the transfer module. The robot is preferably located with the transfer module. In operation, the robot transfers a first workpiece from the entrance of the transfer module to the first supercritical processing module. The robot then transfers a second workpiece from the entrance to the second supercritical processing module. After the workpieces have been processed, the robot returns the first and second workpieces to the entrance of the transfer module. Alternatively, the apparatus includes additional

WO 01/33615 A3

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A. CLASSIFICATION OF SUBJECT MATTER

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According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

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Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal, WPI Data, PAJ

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	WO 91 12629 A (BOK) 22 August 1991 (1991-08-22) abstract; figures 29-32 page 21, line 12-14 page 22, line 33 -page 23, line 11	1,7-11, 15, 17-21, 23-30,33
A	----	31,32
X	WO 99 18603 A (APPLIED KOMATSU TECHNOLOGY, INC.) 15 April 1999 (1999-04-15) page 6, line 30 -page 7, line 3 page 8, line 23-30 ----- -/--	1-3,5,6, 9,12-15, 17-23, 25,27-33

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C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 5 934 856 A (ASAKAWA ET AL.) 10 August 1999 (1999-08-10)	1-11, 15, 17-21, 23, 25-30, 32, 33
A	abstract; figure 10 column 16, line 46 -column 17, line 46	31
X	PATENT ABSTRACTS OF JAPAN vol. 1998, no. 10, 31 August 1998 (1998-08-31) -& JP 10 144757 A (DAINIPPON SCREEN MFG CO LTD), 29 May 1998 (1998-05-29) abstract	1, 9-11, 15-23, 25-30, 33
A	-& US 6 077 321 A (ADACHI ET AL.) 20 June 2000 (2000-06-20) figure 1	31, 32

INTERNATIONAL SEARCH REPORT

Information on patent family members

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Patent document cited in search report	Publication date	Patent family member(s)	Publication date
WO 9112629 A	22-08-1991	EP 0515488 A JP 6500427 T	02-12-1992 13-01-1994
WO 9918603 A	15-04-1999	US 6235634 B EP 1027724 A	22-05-2001 16-08-2000
US 5934856 A	10-08-1999	JP 7335711 A JP 8046013 A US 5769952 A	22-12-1995 16-02-1996 23-06-1998
JP 10144757 A	29-05-1998	US 6077321 A	20-06-2000

